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Abstract of the Disclosure

A flywheel system includes an annular rim mounted for high speed rotation on a flywheel hub. The hub has a radially splined exterior surface facing radially outwards. The rim includes an annular rim liner having an axis of rotation coinciding with the axis of rotation of the hub, and having an inner surface facing radially inward. The inner surface of the rim liner has integral splines projecting radially inward and extending axially. The rim liner splines mate with the hub splines. The flywheel rim liner has a modulus of elasticity e_l , and a density ρ_l , and a liner ratio R_l equal to E_l/ρ_l . The flywheel rim has a modulus of elasticity e_r in the hoop direction and a density ρ_r , and a rim ratio R_r equal to E_r/ρ_r . The materials and configuration of the rim and rim liner are designed so that R_l is less than or equal to R_r , so said flywheel rim liner grows radially with the rim.

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